



Transport
for NSW



ACCIONA Construction – Western Harbour Tunnel

EPL 21791 Monitoring Report

Reporting Period: April 2024



Document Controls

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1. Introduction

1.1 Background

The Western Harbour Tunnel and Warringah Freeway Upgrade project comprises a new motorway tunnel connection across Sydney Harbour, and an upgrade of the Warringah Freeway to integrate the new motorway infrastructure with the existing road network and to enable the potential future connection of the Beaches Link and Gore Hill Freeway Connection project.

The Western Harbour Tunnel and Warringah Freeway Upgrade Environmental Impact Statement dated January 2020 (the EIS) was prepared to assess the impacts of construction and operation of the Western Harbour Tunnel and Warringah Freeway Upgrade project. A Response to Submissions report dated September 2020 (the RtS) was prepared in response to submissions received on the EIS. The EIS environmental management measures were revised and included in Part D of the RtS report.

The Western Harbour Tunnel and Warringah Freeway Upgrade project is classified as State Significant Infrastructure under Part 5, Division 5.2 of the Environmental Planning and Assessment Act 1979 (NSW) (EP&A Act) and Clause 94 of the State Environmental Planning Policy (Infrastructure) 2007. The Western Harbour Tunnel and Warringah Freeway Upgrade project was declared Critical State Significant Infrastructure (CSSI) by the NSW Minister for Planning and Public Spaces (the Minister) on 9 November 2020 under Section 5.13 under the EP&A Act and Clause 16 of the State Environmental Planning Policy (State and Regional Development) 2011.

The Western Harbour Tunnel and Warringah Freeway Upgrade project was approved by the Minister on 21 January 2021.

1.2 Project description

The Western Harbour Tunnel and Warringah Freeway Upgrade project is being constructed in three stages, as described in the Transport for New South Wales (TfNSW) Staging Report, summarised below:

- **Stage 1** – Early and Enabling Works
- **Stage 2** – Warringah Freeway Upgrade (WFU)
- **Stage 3** – Western Harbour Tunnel Project (WHT): The WHT will connect the M4-M5 Link in Rozelle, to the Warringah Freeway at North Sydney/Cammeray, delivered over three stages:
 - **Stage 3A – WHT Southern Tunnels:** comprising of twin bored tunnels between the M4-M5 Link Rozelle Interchange and Birchgrove. Works have commenced on this stage.
 - **Stage 3B – Approach and Integration:**
 - Integrate with the underground WHT Southern Tunnels Works near Birchgrove (Chainage 2750) on the southern zone, aka the Southern approach and integration.
 - integrate with the Warringah Freeway Upgrade works in the north near Cammeray, incorporating a north bound off-ramp at Falcon Street, southbound on-ramp at Berry Street, aka the northern approach and integration.
 - **Stage 3C – Harbour Crossing**
 - The crossing of Sydney Harbour between Birchgrove and Balls Head, Waverton.

TfNSW has engaged ACCIONA to design and construct stage 3B & 3C of the WHT and is referred to as Western Harbour Tunnel Package 2.

2. Environmental Protection Licence and Reporting Requirements

ACCIONA obtained the Environment Protection Licence (EPL No. 21791) from the NSW Environment Protection Authority for the Western Harbour Tunnel Package 2. The licence is for construction works relating to Road Construction as defined under Schedule 1 of the *Protection of the Environment Operations Act, 1997* (POEO Act).

The following report details environmental monitoring undertaken during this reporting period conducted in accordance with the EPL. The licence describes monitoring and reporting requirements for the Western Harbour Tunnel works, and specifically provides discharge criteria for temporary water treatment plant water quality. Noise monitoring can also be requested to be undertaken by an EPA authorized officer and would be documented in this report if required.

The EPL can be found online at the EPA Website at the link below:

<https://app.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=21791&id=21791&option=licence&searchrange=licence&range=POEO%20licence&prp=no&status=Issued>

Monitoring Type: Water Discharge Monitoring

Discharge/ Monitoring Point 1 – Ridge Street Site (WHT 9)

Surface water discharge (L2.4) Special Frequency 1

** Special Frequency 1: less than 24 hours prior to a controlled discharge and daily for any continued controlled discharge, when it is safe to do so and when rainfall causes a discharge from a temporary water treatment plant (ie. holding tank) which has not been emptied within the design management period following cessation of a rainfall event when it is safe to do so.*

No.	Date Sampled	Turbidity (NTU)		pH		Oil & Grease		Comment
		Licence Limit*	Results	Licence Limit	Results	Licence Limit	Results	
1	14/08/2023	51	24.6	6.5 - 8.5	6.67	Not Visible	None	Compliant
2	16/08/2023	51	2.6	6.5 - 8.5	8.05	Not Visible	None	Compliant
3	31/08/2023	51	2.7	6.5 - 8.5	8.14	Not Visible	None	Compliant
4	20/10/2023	51	9.9	6.5-8.5	7.24	Not Visible	None	Compliant
5	05/11/2023	51	49	6.5-8.5	7.79	Not Visible	None	Compliant
6	07/11/2023	51	5.7	6.5-8.5	8.1	Not Visible	None	Compliant
7	09/11/2023	51	0	6.5-8.5	7.97	Not Visible	None	Compliant
8	10/11/2023	51	0	6.5-8.5	7.78	Not Visible	None	Compliant
9	11/11/2023	51	0	6.5-8.5	7.87	Not Visible	None	Compliant
10	17/11/23	51	2.2	6.5-8.5	7.64	Not Visible	None	Compliant
11	25/11/2023	51	38.7	6.5-8.5	7.65	Not Visible	None	Compliant
12	29/11/2023	51	22.5	6.5-8.5	7.68	Not Visible	None	Compliant
13	30/11/2023	51	21.9	6.5-8.5	7.82	Not Visible	None	Compliant
14	01/12/2023	51	21.6	6.5-8.5	8.06	Not Visible	None	Compliant
15	02/12/2023	51	16.9	6.5-8.5	7.84	Not Visible	None	Compliant
16	04/12/2023	51	15.8	6.5-8.5	7.41	Not Visible	None	Compliant
17	15/12/2023	51	0.2	6.5-8.5	7.55	Not Visible	None	Compliant
18	20/12/2023	51	1.1	6.5-8.5	7.70	Not Visible	None	Compliant

No.	Date Sampled	Turbidity (NTU)		pH		Oil & Grease		Comment
		Licence Limit*	Results	Licence Limit	Results	Licence Limit	Results	
19	21/12/2023	51	1.1	6.5-8.5	8.24	Not Visible	None	Compliant
20	26/12/2023	51	11.6	6.5-8.5	7.21	Not Visible	None	Compliant
21	28/12/2023	51	11.1	6.5-8.5	7.19	Not Visible	None	Compliant
22	5/1/2024	51	16.5	6.5-8.5	7.29	Not Visible	None	Compliant
23	8/1/2024	51	2.5	6.5-8.5	7.31	Not Visible	None	Compliant
24	15/1/2024	51	1.3	6.5-8.5	7.55	Not Visible	None	Compliant
25	16/1/2024	51	7.9	6.5-8.5	7.08	Not Visible	None	Compliant
26	18/1/2024	51	6	6.5-8.5	7.91	Not Visible	None	Compliant
27	19/1/2024	51	1.2	6.5-8.5	6.7	Not Visible	None	Compliant
28	23/1/2024	51	1.3	6.5-8.5	7.52	Not Visible	None	Compliant
29	2/02/2024	51	1.0	6.5-8.5	7.79	Not Visible	None	Compliant
30	6/02/2024	51	0	6.5-8.5	6.56	Not Visible	None	Compliant
31	7/02/2024	51	0	6.5-8.5	7.24	Not Visible	None	Compliant
32	12/02/2024	51	0	6.5-8.5	8.36	Not Visible	None	Compliant
33	16/02/2024	51	0.4	6.5-8.5	7.91	Not Visible	None	Compliant
34	17/02/2024	51	2	6.5-8.5	7.95	Not Visible	None	Compliant
35	19/02/2024	51	7	6.5-8.5	8.34	Not Visible	None	Compliant
36	20/02/2024	51	11.3	6.5-8.5	7.81	Not Visible	None	Compliant
37	21/02/2024	51	5.7	6.5-8.5	7.47	Not Visible	None	Compliant
38	22/02/2024	51	5.9	6.5-8.5	8.21	Not Visible	None	Compliant
39	24/02/2024	51	21.3	6.5-8.5	7.86	Not Visible	None	Compliant
40	27/02/2024	51	4.3	6.5-8.5	7.6	Not Visible	None	Compliant
41	29/02/2024	51	3.4	6.5-8.5	7.5	Not Visible	None	Compliant
42	2/03/2024	51	4.1	6.5 - 8.5	7.75	Not Visible	None	Compliant

No.	Date Sampled	Turbidity (NTU)		pH		Oil & Grease		Comment
		Licence Limit*	Results	Licence Limit	Results	Licence Limit	Results	
43	4/03/2024	51	2.6	6.5 - 8.5	8.00	Not Visible	None	Compliant
44	7/03/2024	51	3.9	6.5 - 8.5	8.35	Not Visible	None	Compliant
45	8/03/2024	51	2.9	6.5-8.5	8.27	Not Visible	None	Compliant
46	18/03/2024	51	0.3	6.5-8.5	6.89	Not Visible	None	Compliant
47	28/03/2024	51	6.9	6.5-8.5	6.62	Not Visible	None	Compliant
48	2/04/2024	51	1.4	6.5-8.5	7.36	Not Visible	None	Compliant
49	4/04/2024	51	9.3	6.5-8.5	7.55	Not Visible	None	Compliant
50	5/04/2024	51	13.7	6.5-8.5	7.53	Not Visible	None	Compliant
51	6/04/2024	51	4.4	6.5-8.5	7.32	Not Visible	None	Compliant
52	8/04/2024	51	5.6	6.5-8.5	7.40	Not Visible	None	Compliant
53	9/04/2024	51	7.9	6.5-8.5	6.53	Not Visible	None	Compliant
54	11/04/2024	51	6.4	6.5-8.5	7.26	Not Visible	None	Compliant
55	17/04/2024	51	0.2	6.5-8.5	7.43	Not Visible	None	Compliant
56	18/04/2024	51	2.9	6.5-8.5	7.63	Not Visible	None	Compliant
57	19/04/2024	51	4	6.5-8.5	7.86	Not Visible	None	Compliant
58	22/04/2024	51	3.3	6.5-8.5	8.24	Not Visible	None	Compliant
59	29/04/2024	51	0	6.5-8.5	8.36	Not Visible	None	Compliant
60	30/04/2024	51	2	6.5-8.5	8.16	Not Visible	None	Compliant

*No Surface water discharge occurred from May 2023 – July 2023 therefore no monitoring was undertaken.

Water Monitoring Requirements (M2.2) Special Frequency 2

* *Special Frequency 2: at least one (1) sample from any temporary water treatment plant (ie. holding tank) where a controlled discharge is undertaken within a calendar month period. In the event that two (2) or more controlled discharges are undertaken from a temporary water treatment plant (holding tank) within a calendar month period, a minimum total of two (2) samples must be collected from each discharging temporary water treatment plant (ie. holding tank).*

No.	Date	Ammonia	Arsenic	Chromium	Mercury	Nickel	Nitrate + Nitrite (oxidised nitrogen)	Phosphorus (total)	Total Petroleum Hydrocarbons	Aluminum (dissolved)	Aluminum (total)	Cadmium	Copper	Lead	Zinc
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
1	08/08/23	0.039	0.001	0.002	<0.00005	0.002	0.7	<0.05	0.025	0.03	0.73	<0.0001	0.003	0.002	0.005
2	14/08/23	0.15	0.002	0.011	<0.00005	0.001	0.7	<0.05	0.12	0.12	1	<0.0001	0.006	0.002	0.004
3	20/10/23	0.12	0.00	0.01	<0.00005	0.00	2.00	<0.05	<0.05	0.02	0.87	<0.0001	0.00	0.00	0.01
4	5/11/23	0.12	0.001	<0.001	0.00053	0.002	0.76	<0.05	<0.05	0.02	0.73	<0.0001	0.002	0.001	0.013
5	7/11/23	0.08	<0.001	0.018	0.00005	0.001	1.00	<0.05	0.27	0.02	0.14	<0.0001	0.001	0.001	0.001
6	02/12/23	0.03	<0.001	0.007	0.00005	0.003	1.30	<0.05	<0.05	0.01	0.13	<0.0001	0.002	0.001	0.003
7	4/12/23	0.03	<0.001	0.005	0.00005	0.001	1.30	<0.05	<0.05	0.01	0.03	<0.0001	0.001	0.001	0.006
8	15/1/24	0.03	<0.001	<0.001	0.00005	0.003	1.10	<0.05	<0.05	0.02	0.57	<0.0001	0.001	<0.001	0.005
9	16/1/24	0.11	<0.001	0.002	0.00005	0.001	1.40	<0.05	<0.05	34.00	48.00	<0.0001	0.002	0.002	0.009
10	18/1/24	0.03	<0.001	<0.001	0.00005	0.002	1.00	<0.05	<0.05	0.02	18.00	<0.0001	0.002	<0.001	0.004
11	6/02/24	0.64	<0.001	0.009	0.00005	0.002	1.60	<0.05	0.51	0.23	0.28	<0.0001	0.004	0.001	0.009
12	7/02/24	0.72	0.001	0.0024	0.00005	0.003	2.90	<0.05	0.410	0.050	0.050	<0.0001	0.009	<0.001	0.002
13	12/02/24	0.21	0.002	0.0170	0.00005	0.002	2.16	<0.005	0.410	0.080	0.11	<0.0001	0.008	<0.001	0.009
14	21/02/24	0.61	0.001	0.009	0.00005	0.006	1.97	<0.005	0.360	0.02	0.23	<0.001	0.007	<0.001	0.001
15	18/03/24	0.20	0.001	0.008	0.00005	0.006	0.77	<0.005	0.230	0.010	0.002	<0.0001	0.001	<0.001	0.009
16	28/03/24	0.33	<0.001	0.004	0.00005	0.006	1.38	<0.005	0.360	0.010	2.6	<0.0001	0.007	<0.001	0.011
17	02/04/24	0.31	<0.001	0.002	0.00005	0.002	2.20	<0.005	<0.010	<0.010	0.010	<0.0001	<0.001	<0.001	0.005
18	08/04/24	**Samples were misplaced by lab													

** M2.2 samples were taken prior to discharge on 8/4/24 however in transit to the laboratory they were misplaced. No other M2.2 samples were taken during the month.

Discharge/ Monitoring Point 2 – Cammeray Site (WHT 10)

Surface water discharge (L2.4) – Special Frequency 1

* Special Frequency 1: less than 24 hours prior to a controlled discharge and daily for any continued controlled discharge, when it is safe to do so and when rainfall causes a discharge from a temporary water treatment plant (ie. holding tank) which has not been emptied within the design management period following cessation of a rainfall event when it is safe to do so.

No.	Date Sampled	Turbidity (NTU)		pH		Oil & Grease		Comment
		Licence Limit*	Results	Licence Limit	Results	Licence Limit	Results	
1	04/08/2023	51	49.8	6.5 - 8.5	8.25	Not Visible	None	Compliant
2	05/08/2023	51	20.3	6.5 - 8.5	8.14	Not Visible	None	Compliant
3	06/08/2023	51	34.6	6.5 - 8.5	8.31	Not Visible	None	Compliant
4	07/08/2023	51	39.8	6.5 - 8.5	7.4	Not Visible	None	Compliant
5	08/08/2023	51	47.5	6.5 - 8.5	7.18	Not Visible	None	Compliant
6	09/08/2023	51	49.0	6.5 - 8.5	7.44	Not Visible	None	Compliant
7	10/08/2023	51	18.5	6.5 - 8.5	7.11	Not Visible	None	Compliant
8	11/08/2023	51	6.3	6.5 - 8.5	8.03	Not Visible	None	Compliant
9	12/08/2023	51	45.0	6.5 - 8.5	7.61	Not Visible	None	Compliant
10	14/08/2023	51	27.6	6.5 - 8.5	7.55	Not Visible	None	Compliant
11	15/08/2023	51	45.4	6.5 - 8.5	7.49	Not Visible	None	Compliant
12	16/08/2023	51	39.1	6.5 - 8.5	7.27	Not Visible	None	Compliant
13	17/08/2023	51	30.4	6.5 - 8.5	7.16	Not Visible	None	Compliant
14	18/08/2023	51	46.7	6.5 - 8.5	7.21	Not Visible	None	Compliant
15	21/08/2023	51	4.7	6.5 - 8.5	7.77	Not Visible	None	Compliant
16	22/08/2023	51	43.4	6.5 - 8.5	7.28	Not Visible	None	Compliant
17	23/08/2023	51	41.0	6.5 - 8.5	7.13	Not Visible	None	Compliant
18	1/09/2023	51	3.8	6.5 - 8.5	7.57	Not Visible	None	Compliant
19	4/09/2023	51	29.5	6.5 - 8.5	7.41	Not Visible	None	Compliant
20	5/09/2023	51	9.1	6.5 - 8.5	7.52	Not Visible	None	Compliant
21	8/09/2023	51	16.3	6.5 - 8.5	7.7	Not Visible	None	Compliant

No.	Date Sampled	Turbidity (NTU)		pH		Oil & Grease		Comment
		Licence Limit*	Results	Licence Limit	Results	Licence Limit	Results	
22	28/09/2023	51	17.9	6.5 - 8.5	7.62	Not Visible	None	Compliant
23	5/10/2023	51	2	6.5 - 8.5	8.02	Not Visible	None	Compliant
24	27/10/2023	51	17.4	6.5 - 8.5	8.1	Not Visible	None	Compliant
25	28/10/2023	51	24.2	6.5 - 8.5	8.35	Not Visible	None	Compliant
26	30/10/2023	51	46	6.5 - 8.5	8.41	Not Visible	None	Compliant
27	4/11/2023	51	44.1	6.5 - 8.5	7.5	Not Visible	None	Compliant
28	5/11/2023	51	27.7	6.5 - 8.5	6.55	Not Visible	None	Compliant
29	6/11/2023	51	28.9	6.5 - 8.5	8.16	Not Visible	None	Compliant
30	8/11/2023	51	24.3	6.5 - 8.5	8.36	Not Visible	None	Compliant
31	10/11/2023	51	18.1	6.5 - 8.5	7.29	Not Visible	None	Compliant
32	11/11/2023	51	5.8	6.5 - 8.5	7.44	Not Visible	None	Compliant
33	13/11/2023	51	30.1	6.5 - 8.5	7.45	Not Visible	None	Compliant
34	14/11/2023	51	5.8	6.5 - 8.5	7.44	Not Visible	None	Compliant
35	16/11/2023	51	29.6	6.5 - 8.5	7.58	Not Visible	None	Compliant
36	21/11/2023	51	28.8	6.5 - 8.5	8.34	Not Visible	None	Compliant
37	25/11/2023	51	28.4	6.5 - 8.5	8	Not Visible	None	Compliant
38	27/11/2023	51	45	6.5 - 8.5	7.26	Not Visible	None	Compliant
39	28/11/2023	51	34.5	6.5 - 8.5	7.08	Not Visible	None	Compliant
40	30/11/2023	51	22.7	6.5 - 8.5	7.24	Not Visible	None	Compliant
41	4/12/2023	51	34.2	6.5 - 8.5	8.11	Not Visible	None	Compliant
42	12/12/2023	51	29.1	6.5 - 8.5	7.57	Not Visible	None	Compliant
43	14/12/2023	51	47.1	6.5 - 8.5	6.85	Not Visible	None	Compliant
44	19/12/2023	51	22.2	6.5 - 8.5	8	Not Visible	None	Compliant
45	20/12/2023	51	49	6.5 - 8.5	8.49	Not Visible	None	Compliant
46	22/12/2023	51	26.3	6.5 - 8.5	7.42	Not Visible	None	Compliant

No.	Date Sampled	Turbidity (NTU)		pH		Oil & Grease		Comment
		Licence Limit*	Results	Licence Limit	Results	Licence Limit	Results	
47	26/12/2023	51	21.9	6.5 - 8.5	7.79	Not Visible	None	Compliant
48	28/12/2023	51	37.6	6.5 - 8.5	7.1	Not Visible	None	Compliant
49	31/12/2023	51	38.2	6.5 - 8.5	7.32	Not Visible	None	Compliant
50	1/1/2024	51	23.6	6.5 - 8.5	8.05	Not Visible	None	Compliant
51	5/1/2024	51	7.4	6.5 - 8.5	8.16	Not Visible	None	Compliant
52	8/1/2024	51	40.8	6.5 - 8.5	8.32	Not Visible	None	Compliant
53	11/1/2024	51	24.5	6.5 - 8.5	6.96	Not Visible	None	Compliant
54	15/1/2024	51	20.3	6.5 - 8.5	8.41	Not Visible	None	Compliant
55	17/1/2024	51	12.4	6.5 - 8.5	7.95	Not Visible	None	Compliant
56	19/12/2024	51	39.3	6.5 - 8.5	8.03	Not Visible	None	Compliant
57	22/1/2024	51	29.5	6.5 - 8.5	8.35	Not Visible	None	Compliant
58	23/1/2024	51	11.2	6.5 - 8.5	7.88	Not Visible	None	Compliant
59	24/1/2024	51	23.5	6.5 - 8.5	7.74	Not Visible	None	Compliant
60	25/1/2024	51	35.4	6.5 - 8.5	7.76	Not Visible	None	Compliant
61	29/1/2024	51	43	6.5 - 8.5	8.31	Not Visible	None	Compliant
62	6/02/2024	51	2.3	6.5 - 8.5	6.68	Not Visible	None	Compliant
63	7/02/2024	51	50.2	6.5 - 8.5	7.57	Not Visible	None	Compliant
64	9/02/2024	51	49.6	6.5 - 8.5	7.41	Not Visible	None	Compliant
65	12/02/2024	51	49.8	6.5 - 8.5	7.37	Not Visible	None	Compliant
66	13/02/2024	51	47.9	6.5 - 8.5	7.35	Not Visible	None	Compliant
67	15/02/2024	51	43	6.5 - 8.5	7.35	Not Visible	None	Compliant
68	19/02/2024	51	26.2	6.5 - 8.5	7.82	Not Visible	None	Compliant

No.	Date Sampled	Turbidity (NTU)		pH		Oil & Grease		Comment
		Licence Limit*	Results	Licence Limit	Results	Licence Limit	Results	
69	20/02/2024	51	46.3	6.5 - 8.5	7.43	Not Visible	None	Compliant
70	21/02/2024	51	25.5	6.5 - 8.5	7.2	Not Visible	None	Compliant
71	22/02/2024	51	47.5	6.5 - 8.5	8.24	Not Visible	None	Compliant
72	27/02/2024	51	22.6	6.5 - 8.5	8.32	Not Visible	None	Compliant
73	29/02/2024	51	44.6	6.5 - 8.5	8.21	Not Visible	None	Compliant
74	1/03/2024	51	18.6	6.5 - 8.5	8.45	Not Visible	None	Compliant
75	5/03/2024	51	47.5	6.5 - 8.5	8.38	Not Visible	None	Compliant
76	6/03/2024	51	45.9	6.5 - 8.5	8.44	Not Visible	None	Compliant
77	7/03/2024	51	21.6	6.5 - 8.5	8.31	Not Visible	None	Compliant
78	8/03/2024	51	42.8	6.5 - 8.5	8.23	Not Visible	None	Compliant
79	11/03/2024	51	44.1	6.5 - 8.5	8.46	Not Visible	None	Compliant
80	12/03/2024	51	42.7	6.5 - 8.5	8.42	Not Visible	None	Compliant
81	13/03/2024	51	49.6	6.5 - 8.5	7.92	Not Visible	None	Compliant
82	14/03/2024	51	46.5	6.5 - 8.5	8.29	Not Visible	None	Compliant
83	15/03/2024	51	18.2	6.5 - 8.5	8.43	Not Visible	None	Compliant
84	18/03/2024	51	23.1	6.5 - 8.5	8.41	Not Visible	None	Compliant
85	20/03/2024	51	18.7	6.5 - 8.5	8.46	Not Visible	None	Compliant
86	21/03/2024	51	24.8	6.5 - 8.5	8.45	Not Visible	None	Compliant
87	22/03/2024	51	31.4	6.5 - 8.5	8.45	Not Visible	None	Compliant

No.	Date Sampled	Turbidity (NTU)		pH		Oil & Grease		Comment
		Licence Limit*	Results	Licence Limit	Results	Licence Limit	Results	
88	25/03/2024	51	14.7	6.5 - 8.5	8.38	Not Visible	None	Compliant
89	26/03/2024	51	28.1	6.5 - 8.5	8.45	Not Visible	None	Compliant
90	27/03/2024	51	24	6.5 - 8.5	8.43	Not Visible	None	Compliant
91	2/04/2024	51	43.3	6.5 - 8.5	7.14	Not Visible	None	Compliant
92	3/04/2024	51	31.1	6.5 - 8.5	8.46	Not Visible	None	Compliant
93	4/04/2024	51	27.9	6.5 - 8.5	8.43	Not Visible	None	Compliant
94	5/04/2024	51	47.6	6.5 - 8.5	8.36	Not Visible	None	Compliant
95	8/04/2024	51	45.3	6.5 - 8.5	8.02	Not Visible	None	Compliant
96	9/04/2024	51	43.2	6.5 - 8.5	8.21	Not Visible	None	Compliant
97	10/04/2024	51	44.6	6.5 - 8.5	7.8	Not Visible	None	Compliant
98	11/04/2024	51	44.6	6.5 - 8.5	8.35	Not Visible	None	Compliant
99	12/04/2024	51	20.5	6.5 - 8.5	8.47	Not Visible	None	Compliant
100	15/04/2024	51	2.9	6.5 - 8.5	6.91	Not Visible	None	Compliant
101	16/04/2024	51	0.5	6.5 - 8.5	7.11	Not Visible	None	Compliant
102	17/04/2024	51	27.2	6.5 - 8.5	7.15	Not Visible	None	Compliant
103	18/04/2024	51	39.4	6.5 - 8.5	7.53	Not Visible	None	Compliant
104	19/04/2024	51	19.2	6.5 - 8.5	7.36	Not Visible	None	Compliant
105	23/04/2024	51	35.4	6.5 - 8.5	8.47	Not Visible	None	Compliant
106	26/04/2024	51	0	6.5 - 8.5	7.92	Not Visible	None	Compliant

No.	Date Sampled	Turbidity (NTU)		pH		Oil & Grease		Comment
		Licence Limit*	Results	Licence Limit	Results	Licence Limit	Results	
107	27/04/2024	51	30.5	6.5 - 8.5	7.68	Not Visible	None	Compliant
108	29/04/2024	51	27.6	6.5 - 8.5	7.07	Not Visible	None	Compliant
109	30/04/2024	51	12	6.5 - 8.5	7.35	Not Visible	None	Compliant

No Surface water discharge occurred from May 2023 – July 2023 therefore no monitoring was undertaken.

Water Monitoring Requirements (M2.2) Special Frequency 2

* *Special Frequency 2: at least one (1) sample from any temporary water treatment plant (ie. holding tank) where a controlled discharge is undertaken within a calendar month period. In the event that two (2) or more controlled discharges are undertaken from a temporary water treatment plant (holding tank) within a calendar month period, a minimum total of two (2) samples must be collected from each discharging temporary water treatment plant (ie. holding tank).*

No.	Date	Aluminum (dissolved)	Aluminum (total)	Cadmium	Copper	Lead	Zinc
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
1	4/8/2023	0.05	0.46	<0.0001	0.005	<0.001	0.008
2	7/8/2023	0.02	0.64	<0.0001	0.001	<0.001	0.003
3	14/8/2023	<0.01	1.9	<0.0001	0.001	<0.001	0.004
4	04/09/2023	0.03	7	<0.0001	0.0040	<0.001	0.005
5	28/09/2023	0.05	1.8	<0.0001	0.003	<0.001	0.004
6	05/10/2023	0.03	0.11	<0.0001	0.001	<0.001	8.02
7	27/10/2023	0.02	0.91	<0.0001	0.002	<0.001	8.1
8	30/10/2023	0.02	1.5	<0.0001	0.003	0.002	8.41
9	4/11/2023	0.05	0.86	<0.0001	0.003	0.002	0.004
10	10/11/2023	0.02	2.3	<0.0001	<0.0001	<0.001	0.002
11	04/12/2023	0.57	1.5	<0.0001	0.005	0.001	0.01
12	12/12/2023	0.06	0.86	<0.0001	0.002	<0.001	0.01
13	14/12/2023	0.19	2.4	<0.0001	0.004	<0.001	0.036
14	11/1/2024	0.09	5.7	<0.0001	0.002	<0.001	0.01
15	15/1/2024	6.4	7.7	<0.0001	<0.0001	<0.001	0.004
16	06/02/2024	0.07	0.37	<0.0001	<0.0001	<0.001	0.003
17	16/02/2024	0.17	22	<0.0001	0.003	<0.001	0.003
18	06/03/2024	0.05	0.48	<0.0001	<0.0001	<0.001	<0.001
19	07/03/2024	0.11	0.88	<0.0001	0.002	0.001	0.008
20	09/04/2024	0.06	0.51	<0.0001	0.001	<0.001	<0.001
21	15/04/2024	0.03	0.37	<0.0001	0.001	<0.001	0.002

Groundwater Discharge/ Monitoring Point 3 – Cammeray Site (WHT 10)

Ground water discharge (L2.4) – Fortnightly

No.	Date Samples	Turbidity	pH	Oil & Grease	Aluminium (ug/L)	Chromium (Hexavalent) (ug/L)	Nitrogen (total) (ug/L)	Nitrogen Oxides (ug/L)	Phosphorus (total) (ug/L)	Comment
		51	6.5 - 8.5	Not Visible	104	7.8	910	260	39	
1	29/02/24	0	6.77	Not visible	20	<1	200	40	100	Non-compliant for Phosphorus*

*Non-compliant result for Phosphorus was identified following review of water monitoring data. Notification has been provided to the EPA and discharge has since ceased.

** No discharges occurred during March 2024

***No discharges occurred during April 2024

Water Monitoring Requirements (M2.2) – Fortnightly

* **U1.1:** Investigate the impact on the receiving surface and ground water environments and the performance of the construction water treatment plant at Cammeray Ancillary Support Site (WHT10) by undertaking the following: a) collect fortnightly operational samples for a period of 6 months commencing from the date the construction water treatment plant becomes operational, and b) samples are to be taken of the input water, discharge water and downstream surface water from Willoughby Creek and analysing for concentrations of pollutants in Condition M2.2 Point 3.

No.	Location	Date	Aluminum (dissolved)	Aluminum (total)	Arsenic	Cadmium	Chromium VI	Copper	Iron	Lead	Manganese	Nickel	Nitrogen Oxides	Nitrogen (total) as N	Total Phosphorus (as P)	Total Petroleum Hydrocarbons	Oil and Grease	pH	Turbidity
			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	Visible
1	Input Water	29/02/24	880	1500	<1	<0.1	<1	<1	30	<1	<5	<1	300	1300	<50	950	Not visible	11.40	9.10
	Discharge Water		20	20	11	<0.1	<1	<1	50	<1	110	28	40	200	100	<50	Not visible	6.77	0
	Willoughby Creek		30	150	<1	0.1	<1	<1	4	30	<1	<5	1	2220	2200	60	<50	Not visible	7.72

* No discharges occurred during March 2024

**No discharges occurred during April 2024

Discharge/ Monitoring Point 4 – Berry Street Site (WHT 8)

Surface water discharge (L2.4) Special Frequency 1

* Special Frequency 1: less than 24 hours prior to a controlled discharge and daily for any continued controlled discharge, when it is safe to do so and when rainfall causes a discharge from a temporary water treatment plant (ie. holding tank) which has not been emptied within the design management period following cessation of a rainfall event when it is safe to do so.

No.	Date Sampled	Turbidity (NTU)		pH		Oil & Grease		Comment
		Licence Limit*	Results	Licence Limit	Results	Licence Limit	Results	

* No surface water discharge occurred during April 2024

Water Monitoring Requirements (M2.2) Special Frequency 2

* Special Frequency 2: at least one (1) sample from any temporary water treatment plant (ie. holding tank) where a controlled discharge is undertaken within a calendar month period. In the event that two (2) or more controlled discharges are undertaken from a temporary water treatment plant (holding tank) within a calendar month period, a minimum total of two (2) samples must be collected from each discharging temporary water treatment plant (ie. holding tank).

No.	Date	Arsenic	Chromium	Mercury	Nickel	Pesticides	PAHs	Total Petroleum Hydrocarbons	Aluminum (dissolved)	Aluminum (total)	Cadmium	Copper	Lead	Zinc
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L

* No surface water discharge occurred during April 2024.

Groundwater Discharge/ Monitoring Point 5 – Ridge Street (WHT 9)

Groundwater discharge (L2.4) Fortnightly

* Special Frequency 1: less than 24 hours prior to a controlled discharge and daily for any continued controlled discharge, when it is safe to do so and when rainfall causes a discharge from a temporary water treatment plant (ie. holding tank) which has not been emptied within the design management period following cessation of a rainfall event when it is safe to do so.

No.	Date Sampled	Turbidity (NTU)		pH		Oil & Grease		Comment
		Licence Limit*	Results	Licence Limit	Results	Licence Limit	Results	

* No groundwater has been intercepted on site. No groundwater discharge occurred during April 2024

Water Monitoring Requirements (M2.2) – Fortnightly

* **U1.1:** Investigate the impact on the receiving surface and ground water environments and the performance of the construction water treatment plant at... Ridge Street Ancillary Support Site (WHT09) by undertaking the following: a) collect fortnightly operational samples for a period of 6 months commencing from the date the construction water treatment plant becomes operational, and b) samples are to be taken of the input water, discharge water and downstream surface water from ...the stormwater drain issuing to Neutral Bay at Anderson Park and analysing for concentrations of pollutants in Condition M2.2 ...Point 5.

No.	Location	Date	Aluminum (dissolved)	Aluminum (total)	Arsenic	Cadmium	Chromium VI	Copper	Iron	Lead	Manganese	Nickel	Nitrogen Oxides	Nitrogen (total) as N	Total Phosphorus (as P)	Total Petroleum Hydrocarbons	Oil and Grease	pH	Turbidity
			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	Visible	pH	ntu

* No groundwater has been intercepted on site. No monitoring occurred during April 2024.

Noise Monitoring

Table 1 - Noise monitoring results

Month	Monitoring Location (Noise Catchment Area, Street, Suburb)	Date	Time	Attended or Continuous Monitoring	Parameter	Goal/Target dB(A)	Actual dB(A)	Comments
May 2023	N/A							
June 2023	N/A							
July 2023	N/A							
August 2023	N/A							
September 2023	N/A							
October 2023	N/A							
November 2023	N/A							
December 2023	N/A							
January 2024	N/A							
February 2024	N/A							
March 2024	N/A							
April 2024	N/A							